

PATENT

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WHAT IS CLAIMS IS:

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1. A method of displaying an input signal, the method comprising:
 - sampling the input signal;
 - searching for a zero space pattern in the sampled signal;
 - locating a first zero space;
 - locating a second zero space, following the first zero space;
 - calculating bit period of the input signal; and
 - displaying the input signal using the calculated bit period as the basis for a scale.
 2. The method recited in claim 1 further comprising initializing offset and time scale.
 3. The method recited in claim 1 further comprising determining whether NRZ autoscale is applicable.
 4. The method recited in claim 1 wherein the step of locating the first zero space comprises:
 - locating a first transition, X_1 , where value of the input signal is more than a threshold value, V_{THRES} , before the first transition, X_1 , but less than the threshold value, V_{THRES} , after the first transition, X_1 , the first transition, X_1 , being the first such transition following the offset; and
 - locating a second transition, X_2 , where value of the input signal is less than the threshold value, V_{THRES} , before the second transition, X_2 , but more than the threshold value, V_{THRES} , after the second transition, X_2 , the second transition, X_2 , being the first such

- transition following the first transition, X_1 .
5. The method recited in claim 4 wherein the step of locating the second zero space comprises:
- locating a third transition, X_3 , where value of the input signal is more than a threshold value, V_{THRES} , before the third transition, X_3 , but less than the threshold value, V_{THRES} , after the third transition, X_3 , the third transition, X_3 , being the first such transition following the second transition, X_2 ; and
 - locating a fourth transition, X_4 , where value of the input signal is less than the threshold value, V_{THRES} , before the fourth transition, X_4 , but more than the threshold value, V_{THRES} , after the fourth transition, X_4 , the fourth transition, X_4 , being the first such transition following the third transition, X_3 .
6. The method recited in claim 5 wherein the step of calculating the bit period comprises determining temporal difference between the third transition, X_3 , and the first transition, X_1 .
7. The method recited in claim 1 further comprising displaying the input signal using a multiple of the calculated bit period as the scale.
8. An apparatus for displaying an input signal, the apparatus comprising:
- a processor;
 - storage connected to the processor, the storage including instructions for the processor to
 - sample the input signal;
 - search for a zero space pattern in the sampled

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signal;

locate a first zero space;

locate a second zero space, following the first zero space;

calculate bit period of the input signal; and
display the input signal using the calculated bit period as the basis for a scale.

9. The apparatus recited in claim 8 wherein the storage further comprises instructions for the processor to initialize offset and time scale.
10. The apparatus recited in claim 8 wherein the storage further comprises instructions for the processor to determine whether NRZ autoscale is applicable.
11. The apparatus recited in claim 8 wherein the storage further comprises instructions for the processor to:
- locate a first transition, X_1 , where value of the input signal is more than a threshold value, V_{THRES} , before the first transition, X_1 , but less than the threshold value, V_{THRES} , after the first transition, X_1 , the first transition, X_1 , being the first such transition following the offset; and
 - locate a second transition, X_2 , where value of the input signal is less than the threshold value, V_{THRES} , before the second transition, X_2 , but more than the threshold value, V_{THRES} , after the second transition, X_2 , the second transition, X_2 , being the first such transition following the first transition, X_1 .
12. The apparatus recited in claim 11 wherein the storage further comprises instructions for the processor to:

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locate a third transition, X_3 , where value of the input signal is more than a threshold value, V_{THRES} , before the third transition, X_3 , but less than the threshold value, V_{THRES} , after the third transition, X_3 , the third transition, X_3 , being the first such transition following the second transition, X_2 ; and

locate a fourth transition, X_4 , where value of the input signal is less than the threshold value, V_{THRES} , before the fourth transition, X_4 , but more than the threshold value, V_{THRES} , after the fourth transition, X_4 , the fourth transition, X_4 , being the first such transition following the third transition, X_3 .

13. The apparatus recited in claim 5 wherein the storage further comprises instructions for the processor to determine temporal difference between the third transition, X_3 , and the first transition, X_1 .
14. The apparatus recited in claim 13 wherein the storage further comprises instructions for the processor to display the input signal using a multiple of the calculated bit period as the scale.
15. A machine readable medium comprising program for the machine to display an input signal, the program comprising instructions for the machine to:
 - sample the input signal;
 - search for a zero space pattern in the sampled signal;
 - locate a first zero space;
 - locate a second zero space, following the first zero space;
 - calculate bit period of the input signal; and

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display the input signal using the calculated bit period as the basis for a scale.

16. The medium recited in claim 15 wherein the medium is selected from a group consisting of magnetic disc, optical disc, read only memory (ROM), random access memory (RAM), harddrive, compact disc (CD), flash memory, and solid state memory.

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